

REMARKS

Applicants wish to thank the Examiner for careful consideration of this application. Claims 8-10 and 23-32 are pending in this application. Claims 8-10 and 23-32 have been amended for clarity. Support for the amendments can be found in the specification as originally filed. In particular, support for the addition of "non-adhesive" can be found in paragraph 5 of the published application. No new matter has been added.

Rejections under 35 USC 103

Claims 1, 2, 4-10, 15, 20 and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,127,488 to Obrecht, et al. (herein after "Obrecht") or it's foreign equivalent German Patent No. DE 19707487 (hereinafter "DE '487"), each in view of U.S. Patent No. 5,232,531 to Dammann, et al. (hereinafter "Dammann") or JP 57-212239 (hereinafter "JP '239") or JP 5-17630 (hereinafter "JP '630").

The Examiner concedes that Obrecht is silent as to the use of polyisocyanate as a crosslinking agent and contends that the secondary references, Dammann, JP '239 and JP '630 teach that the use of polyisocyanate improves the physical properties of the rubber vulcanates. Applicants respectfully disagree.

First, applicants continue to assert that there is no teaching or suggestion in any of the cited references that would provide motivation to the skilled artisan to combine Obrecht with Dammann because Dammann is directed to adhesives, having a tackifying resin present. The combination of Obrecht with Dammann would, therefore, necessarily produce an adhesive composition containing a tackifying resin, which would be expected to render the claimed vulcanate unsuitable for it's claimed purpose (e.g., cable sheaths, hoses, drive belts, conveyor belts, roller coverings, tire components, shoe soles, gaskets, damping elements and membranes as recited in amended claim 10). One of ordinary skill in the art would understand that a vulcanate used for any of these purposes would not have adhesive properties providing clear evidence of the non-obviousness of Applicants claimed invention.

The Examiner further alleges that Dammann's disclosure of the use of curatives such as sulfur is tantamount to a disclosure of a non-adhesive vulcanized rubber material. Dammann, however, discloses the formation and application of its adhesive composition at

ambient temperatures and is silent to processing of the rubber adhesive at the high temperatures typically used in a vulcanization process (Dammann, Examples 1 and 2). Without the disclosure of any vulcanization step, Applicants respectfully assert that Dammann does not explicitly or inherently disclose the non-adhesive vulcanized rubber or molded rubber body of the claimed invention. Even assuming *arguendo* that Dammann did disclose a vulcanization step, Dammann would be expected to result in an adhesive vulcanate, given that Dammann is clearly directed only to compositions having adhesive properties (see, title and specification). As Obrecht and Dammann, alone or in combination, fail to teach or suggest the claimed invention, Applicants respectfully assert that the claims are not obvious and request that the claim rejections under 35 U.S.C. § 103 be withdrawn.

The combination of Obrecht and JP '630 also fails to teach or suggest the claimed vulcanates. As was the case with Dammann, JP '630 is directed to adhesive compositions which would be expected to render the claimed vulcanates unsuitable for their intended use. While the Examiner alleges that the adhesive compositions of JP '630 would be expected to be crosslinked given the "use of polyisocyanates and components having active hydrogen atoms" (Office Action, page 4), the abstract of JP '630 appears to be silent as to compositions without adhesivity and, therefore, does not suggest the use of its composition for purposes such as those recited by Claim 10.

Moreover, the abstract for JP '630 fails to teach or suggest the parts of multifunctional isocyanate recited by Claim 1. Claim 1 recites that there are 1 to 100 parts of multifunctional isocyanate based on 100 parts by weight of the rubber component (A), while JP '630 discloses the use of an adhesive solution having 100 to 250 parts of a polyfunctional isocyanate based on 100 parts of a liquid diene rubber. As Obrecht and the abstract of JP '630 fails to teach or suggest one of the claim elements, Applicants respectfully assert that the claims are not obvious and request that the claim rejections under 35 U.S.C. § 103 be withdrawn.

The combination of Obrecht and JP '239 also fail to teach or suggest the claimed vulcanates. The Examiner alleges that one of ordinary skill would be motivated to use polyisocyanates in the Obrecht formulations because the secondary references - such as JP '239 - "disclose that polyisocyanate formulations display excellent moldability and bonding

resistan[ce] to heat and humidity" (Office Action, page 3). While JP '239 does disclose rubber compositions with high dynamic modulus, JP '239 does not provide any teaching that the polyisocyanate component is responsible for this increased property due to the presence of the other components in the rubber composition. For example, in addition to the polyisocyanate, JP '239 discloses that its rubber composition includes, in part, 5-25 parts of unmodified or modified novalac-type phenolic resin. Phenolic resins are well-known to have active hydrogen groups which can react with the isocyanate groups on the polyisocyanate. Further, phenolic resins have been used to impart greater mechanical strength (see e.g., U.S. Patent No. 5,965,671). Hence, one of ordinary skill in the art would likely attribute the higher dynamic modulus to the presence of the phenolic resin and would, therefore, not be motivated to combine and add the polyisocyanate of JP '239 with the rubber composition of Obrecht. Accordingly, Applicants respectfully assert that Obrecht and JP '239, alone or in combination, fails to teach or suggest the claimed invention and request that the claim rejections under 35 U.S.C. § 103 be withdrawn.

For all of the reasons summarized herein, Applicants respectfully assert that the claims are not obvious over the cited references. However, solely in the interest of bringing prosecution of this application to a close, Applicants have amended the pending claims to recite that the claimed rubber vulcanate is "non-adhesive". Applicants assert that the claims as amended, along with Applicants claims reciting the use of the claimed vulcanates in articles that require non-adhesive properties, clearly establish that the claimed vulcanates and the adhesives of the cited prior art are mutually exclusive, and that Applicant's vulcanates are non-obvious over the cited references. Accordingly, reconsideration and withdrawal of the Examiner's rejection is respectfully requested.

The USPTO is hereby authorized to charge any fees for an extension of time or those under 37 C.F.R. 1.16 or 1.17, which may be required by this paper, and/or to credit any overpayments to Deposit Account No. 50-2527.

It is believed that the pending claims are now in condition for allowance and notice to such effect is respectfully requested. Should the Examiner have any questions regarding this application, the Examiner is invited to initiate a telephone conference with the undersigned.

Respectfully submitted,

By

Jennifer R. Seng
Attorney for Applicants
Reg. No. 45,851

LANXESS Corporation
Law & Intellectual Property Department
111 RIDC Park West Drive
Pittsburgh, Pennsylvania 15275-1112
(412) 809-2233
FACSIMILE PHONE NUMBER:
(412) 809-1054

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